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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 5400 SEATTLE, WA 98104			AMRANY, ADI	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/506,944	Applicant(s) WOBBEN, ALOYS	
	Examiner Adi Amrany	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19,21-23,25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19,21-23,25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/25/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 25, 2006 have been fully considered but they are not persuasive.

With respect to claims 1 and 19, Wichert discloses the amended limitation of "if more energy is consumed in the network than is generated by the first power generator, initially the electrical intermediate storage device is used for delivering power whereby intermediate storage devices of an accumulator block type of a battery storage device are used preferably to support the network when the power required by the network can be delivered not at all or only insufficiently from renewable energy source" (page 211, lines 14-17; page 212, lines 21-33). Contrary to applicant's arguments, Wichert discloses two alternative methods of supplying power. The first method comprises only running the engine when a minimal load is exceeded (page 211, lines 16-17) and sizing the battery bank to reduce the run-time of the engine (page 212, lines 21-23). This is done because engines are inherently ineffective when operated at light loads (lines 14-15). *Alternatively*, Wichert discloses that "dump loads" (page 211, lines 17-18; page 212, lines 23-24) may be used to ensure the engine is substantially loaded. Wichert uses the terms, "alternatively" and "as well as," to distinguish between the two methods of supplying power from the battery banks when power is not available from the renewable energy source.

Further, Wichert inherently discloses "a device connected to the bus bar for detecting the power required in the network." As discussed in the non-final rejection

(March 23, 2006), the Wichert energy system must contain a device capable of sensing the power required in the network in order to determine when to charge or discharge the electrical intermediate storage devices.

With respect to claims 21-23 (claims 20 and 24 are cancelled), the argument is not persuasive because Wichert anticipates the limitations of claim 19, as discussed above.

With respect to the rejection of claims 16-17 and 25, Claim 1 is anticipated by Wichert. The claims, therefor, are rejected under 35 U.S.C. §103(a) as being unpatentable over Wichert in view of De Zeeuw, as will be discussed below.

With respect to the §103 rejection of claims 1-4, 7-8 and 11-14, Wichert anticipates the amended limitations of claim 1 and "a device connected to the bus bar for detecting the power required in the network," as discussed above.

Applicant's arguments regarding the §103 rejection of claims 5-6, 9-10 and 15 are also not persuasive. Applicant argues that the secondary references (Da Ponte, Jaunich, Suzuki and Offringa) do not meet the amended limitations of claim 1. The non-final rejection never maintained a rejection of claim 1 in view of these references. These references were used to establish the obviousness of the limitations of the respective *dependent* claims when combined with the limitations of independent claim 1. Claim 1 is rejected over the disclosures of Wichert and De Zeeuw.

With respect to claim 18, Wichert discloses the amended limitations of claim 1, as discussed above. Thus, the claim remains rejected in view of the cited references.

Lastly, new claim 26 appears to be a limitation previously presented in claim 1. As will be discussed below, the limitation of claim 26 remains rejected as being anticipated by Wichert.

Claim Objections

2. Claims 16 and 17 are objected to because there is no basis for the term "island network." The preliminary amendment, filed by the applicant on September 8, 2004, changed the preamble of the claims from an "electrical island network" to "an isolated electrical network. The body of the claim, however, was not similarly amended.

3. Claim 17 is objected to because there is no basis for the term, "generator." Independent claim 1 recites the limitations of both a power generator and a second generator. Claim 16 further recites the limitation of at least one first primary power generator and a synchronous generator. For the purposes of the art rejection of claim 17, it is interpreted that the applicant intended to recite the *second/synchronous* generator.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Wichert ("PV-Diesel Hybrid Energy Systems for Remote Area Power Generation – A Review of Current Practice and Future Developments"), from applicant's Information Disclosure Statement.

With respect to claim 1, Wichert discloses an isolated electrical network (figure 1 on page 213; page 209, Introduction, lines 1-3) with at least one first power generator (page 212, lines 1-3), which uses a renewable energy source, wherein the power generator is preferably a wind power station with a generator (figure 1, "wind generator"), wherein a second generator is provided, which can be coupled to an internal combustion engine (figure 1, "diesel engine + alternator"),

wherein the wind power station can be controlled in terms of its rotational rpm and blade position (specification, page 6, lines 26-28),

characterized in that a bus bar (figure 1, "dc bus") for feeding the generated energy into the network is provided and a device connected to a bus bar for detecting the power required in the network is provided (inherent),

and at least one intermediate storage device for storing electrical energy is provided (figure 1, "battery bank;" page 211, lines 26-28),

wherein the intermediate storage device can be coupled to the first power generator (figure 1), and

if more energy is consumed in the network than is generated by the first power generator, initially the electrical intermediate storage device is used for delivering power whereby intermediate storage devices of an accumulator block

type of a battery storage device are used preferably to support the network when the power required by the network can be delivered not at all or only insufficiently from renewable energy source (page 211, lines 14-17; page 212, lines 21-33).

Wichert discloses that a second generator is coupled to the internal combustion engine (page 212, lines 21-23, "engine-driven generator"). Applicant's specification discloses that the wind generator is controlled in a *known manner* (page 6, line 26-29) and further describes the method of control by variable speed and variable blade adjustment (page 3, lines 26-29). Further, it is inherent in the system disclosed in Wichert that it further comprises a device for detecting power required in the network, because the Wichert energy system must contain a device capable of determining when to charge or discharge the electrical intermediate storage devices.

With respect to claim 19, Wichert discloses the apparatus necessary to complete the recited method, as discussed in the rejection of claim 1, above. As discussed above, Wichert discloses the use of intermediate storage devices to initially deliver energy when the required power is not met by the at least one wind-power station.

With respect to claim 21, Wichert discloses the method of claim 19, and further discloses the apparatus necessary to complete the method recited in claim 21, as discussed above in the rejection of claim 1. Wichert disclose the internal combustion engine are provided for driving at least one second generator (figure 1, "diesel engine + alternator"), and the internal combustion engines are turned on only when the power delivered by the power generators using renewable energy sources and/or by the electrical intermediate storage devise falls below a predetermined threshold for a

predetermined period of time (page 212, lines 29-31). Wichert discloses that the internal combustion engines are engaged when the power supplied from the renewable energy source during "extended periods" of "low energy."

With respect to claim 22, Wichert discloses the method according to claim 21, and further discloses the apparatus necessary to complete the method recited in claim 22, as discussed in the rejection of claim 1, above (see also page 211, lines 28-29).

With respect to claim 23, Wichert discloses the method according to claim 19, and further discloses the apparatus necessary to complete the method recite in the claim 23, as discussed in the rejection of claim 1, above. Wichert discloses using electrical intermediate storage devices (figure 1, "battery bank"; page 211, lines 26-28).

With respect to claim 26, Wichert discloses the isolated electrical network according to claim 1, and further discloses for the case that the output power of the first power generator is greater than the power of the load required in the network, initially electrical energy of the first generator is supplied to the intermediate storage device if the intermediate storage device is not full (page 211, lines 28-29)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 7-8, 11-14, 16-18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw ("On the Components of a Wind Turbine Autonomous Energy System"), provided in applicant's Information Disclosure Statement. This is a separate and alternate rejection to the prior §102(b) rejection based on Wichert.

With respect to claim 1, Wichert discloses the isolated electrical network, as discussed above, but does not expressly disclose that the wind energy system can be controlled in terms of its rpm and blade position.

De Zeeuw discloses an isolated electrical network with at least one first power generator, wherein the speed of the wind rotor can be controlled by adjusting the blade-angle (page 193, column 2, lines 41-46).

Wichert and De Zeeuw are analogous because they are from the same field of endeavor, namely, hybrid energy systems that utilize both a renewable energy source and an internal combustion engine.

At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert with the blade angle/speed control disclosed in De Zeeuw. The motivation for doing so would have been to control the output of the wind energy system in the instance where the output was larger than the capacity of the rest of the system.

With respect to claim 2, Wichert discloses the isolated electrical network according to claim 1, but does not expressly disclose the first power generator has a synchronous generator, which contains a converter with a dc voltage intermediate

circuit with at least one first rectifier and an inverter. Wichert discloses using a bi-directional inverter (figure 1; page 212, lines 36-37).

De Zeeuw discloses a first energy producer (page 193, column 1, lines 15-16), a synchronous generator (page 193, column 2, lines 3-5), and a converter (figure 1; page 193, column 1, lines 19-21), which contains a rectifier, a dc link, and an inverter.

The elements recited in claim 2 are treated as separate, but connected, components, as shown in figure 1.

With respect to claim 3, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1. Wichert further discloses at least one electrical element (figure 1, "battery bank"; page 211, lines 26-28) connected to the dc voltage intermediate circuit for feeding electrical energy with dc voltage.

With respect to claim 4, Wichert and De Zeeuw disclose the isolated electrical network according to claim 3, and further, Wichert discloses that the electrical element is a photovoltaic element and/or a mechanical energy accumulator and/or an electrochemical storage unit and/or a capacitor and/or a chemical storage unit as the electrical intermediate storage device (page 211, lines 28-41).

With respect to claim 7, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; Wichert discloses a controller (page 212, lines 37-39) for controlling the *isolated* network. De Zeeuw also shows a power control, rectifier control, and frequency control units in figure 1.

With respect to claim 8, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; Wichert discloses a boost/buck converter

(figure 1, "battery charger") between the electrical element and the dc voltage intermediate circuit. The battery charger, while not specifically disclosed in the article, is shown in the figure to be a dc/dc converter.

With respect to claim 11, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; Wichert discloses that all of the power generators using renewable energy sources and intermediate storage devices power a common dc voltage intermediate circuit (figure 1, "dc bus").

With respect to claim 12, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; De Zeeuw discloses a network-commutated inverter (page 193, column 1, line 44 to column 2, line 2).

With respect to claim 13, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; De Zeeuw discloses the energy for operating the electromagnetic coupling is made available by an electricity storage device and/or by a primary power generator (figure 1; page 193, column 2, lines 8-11). It is inherent that the energy for operating the coupling must come from within the isolated system. Although De Zeeuw does not expressly disclose where the power is taken from, it would be obvious to a person of ordinary skill that the wind turbines or the controllable loads would supply the operating power.

With respect to claim 14, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, and further; De Zeeuw discloses a seawater desalination/service water generation plant is connected to the *isolated* network, wherein this plant generates service water (drinking water), when the power supplied by

the primary power generator is greater than the power consumption of the other electrical loads connected to the *isolated* network (page 193, column 1, lines 1-14). De Zeeuw discloses that the isolated network is designed for supplying electricity to an area where no utility grid exists, and that the network has been used on a coastline. De Zeeuw also provides a discussion on how to prevent salt corrosion on the wind turbine. It would be obvious to a person skilled in the art to use this network in a locale where there are no established sources of electricity or drinkable water. De Zeeuw further discloses that excess energy may be routed to a controllable load (page 193, column 2, lines 15-20). Therefore, it would be obvious to supply power generated by the isolated electrical network to a seawater desalination/usable water production plant.

With respect to claim 16, Wichert discloses the isolated electrical network according to claim 1. De Zeeuw discloses an isolated electrical network ("autonomous energy system") with at least one first primary power generator (figure 1, SM1; page 193, column 1, lines 15-16) for generating electrical energy for an *isolated* electrical network, wherein a synchronous generator (figure 1, SM2; page 193, column 2, lines 3-10) is provided, which has the function of a network generator, wherein the synchronous generator can operate in motor mode (page 193, column 2, lines 11-15, "synchronous compensator") and the energy required for the motor operation in is made available by the primary power generator.

If the internal combustion engine is turned off or disconnected from the system, the only source of energy is the primary power generator (wind turbines). Therefore, it is

inherent that the primary power generator would power the synchronous generator in motor mode.

With respect to claim 17, Wichert and De Zeeuw discloses the isolated network according to claim 16, and further discloses the *synchronous* generator can be connected to an internal combustion engine (figure 1; page 193, column 2, lines 8-11), which is deactivated when the electrical power of the primary power generator is greater or approximately the same size as the electrical power consumption in the *isolated* network.

With respect to claim 18, Wichert and De Zeeuw disclose the isolated network according to claim 16. De Zeeuw also discloses a bus bar for feeding the generated energy into the network (figure 1, conductors between the rectifiers and inverters). De Zeeuw discusses controllability based on too much or too little power, but there is no mention of a device for detecting the power required by the network.

Wichert inherently discloses a device for detecting the power required by the load, as discussed above, to determine when to charge or discharge the electrical intermediate storage devices.

With respect to claim 25, De Zeeuw discloses the use of a synchronous generator as a network generator (figure 1, SM2; page 193, column 2, lines 3-10) for a network-commutated inverter (page 193, column 1, line 44 to column 2, line 2) for feeding an alternating current into an electrical power supply network, wherein the generator works in motor operation (page 193, column 2, lines 11-15, "synchronous compensator") and the drive of the generator is realized by a flywheel and/or by

providing electrical energy from a renewable-energy power generator (figure 1, SM1; page 193, column 1, lines 15-16).

8. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Da Ponte (US 6,175,217).

With respect to claim 5, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1. Wichert and De Zeeuw do not expressly disclose a flywheel, which can be coupled to the second or a third generator.

Da Ponte discloses at least one controllable source (column 1, lines 40-41; column 3, lines 57-62), whose output can be regulated by an energy storage device, such as a flywheel (figure 5, item 28; column 7, lines 50-53).

Wichert, De Zeeuw, and Da Ponte are analogous because they are from the same field of endeavor, namely regulating the output of a hybrid energy system. At the time of the invention by applicant, it would have been obvious to a person of ordinary skill in the art to combine the hybrid energy system disclosed in Wichert and De Zeeuw with the flywheel energy storage device disclosed in Da Ponte and to couple the flywheel to the second generator. The motivation for doing so would have been to provide a electrical network that can cope with substantial variations in load requirements while also operating efficiently.

With respect to claim 10, Wichert and De Zeeuw disclose the isolated electrical network according to claim 1. Wichert and De Zeeuw do not expressly disclose a flywheel with a generator for supplying energy into the dc voltage intermediate circuit.

Da Ponte discloses at least one controllable source (column 1, lines 40-41; column 3, lines 57-62), whose output can be regulated by an energy storage device, such as a flywheel (figure 5, item 28; column 7, lines 50-53).

It appears the "downstream rectifier" is the inverter 24, which is not a separate device from the previously claimed inverter.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Jaunich (US 6,605,880).

Wichert and De Zeeuw disclose the isolated electrical network according to claim 1, as discussed above. Wichert and De Zeeuw do not expressly disclose several internal combustion engines, each can each be coupled to a generator.

Jaunich discloses a plurality of secondary generators (column 3, lines 61-67), where the generators can be internal combustion engines (column 3, lines 46-50).

Wichert, De Zeeuw, and Jaunich are analogous because they are from the same field of endeavor, namely hybrid energy systems that utilize both a renewable energy source and an internal combustion engine. At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert and De Zeeuw, with the multiple internal combustion engines disclosed in Jaunich. The motivation for doing so would have been to increase the power capacity of the isolated electrical network to supply the quantity of power required by the loads.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Suzuki (JP 2000-073931A).

Wichert and De Zeeuw disclose the isolated electrical network according to claim 3, as discussed above. Wichert discloses a battery bank, as discussed above. Wichert and De Zeeuw, however, do not expressly disclose charge/discharge circuits between the electrical storage element and the dc voltage intermediate circuit.

Suzuki discloses a charging and discharging device placed between the electrical element and the dc voltage intermediate circuit (figure 1, item 5; abstract, lines 1-9). Suzuki discloses that the electrical element is a NaS battery (figure 1, item 6) and further discloses that the output power of the wind power generating equipment (figure 1, item 2) is passed through a rectifier (figure 1, item 3). Therefore, the output of the charging/discharging device is connected to the dc voltage intermediate circuit.

Wichert, De Zeeuw, and Suzuki are analogous because they are from the same field of endeavor, namely hybrid energy systems that utilize both a renewable energy source and an internal combustion engine. At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert and De Zeeuw, with the charging/discharging device disclosed in Suzuki. The motivation for doing so would have been to control the charging and discharging of the battery in order to feed a constant power to the isolated electrical network.

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wichert, in view of De Zeeuw, and in further view of Offringa (EP 046,530 A1).

Wichert and De Zeeuw disclose the isolated electrical network according to claim 1. Wichert and De Zeeuw do not expressly disclose a pump storage device is provided, which receives its electrical energy from the primary power generator.

Offringa discloses uses variations in a wind turbine's power output to control a pump station, in order to pump water to increased heights (abstract, lines 16-20).

Wichert, De Zeeuw, and Offringa are analogous because they are from the same field of endeavor, namely hybrid energy systems that utilize both a renewable energy source and an internal combustion engine. At the time of the invention by applicant, it would have been obvious to combine the hybrid energy system disclosed in Wichert and De Zeeuw, with having the excess network power supplied to a pump station, as disclosed in Offringa. The motivation for doing so would have been to apply excess power to a load in order to keep the network power output constant.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA



BURTON S. MULLINS
PRIMARY EXAMINER